

IN THE CLAIMS

1-19. (Cancel)

20. (New) A process for removing a solvent from a first solution, said process comprising:

a) positioning a selective membrane between the first solution and a second solution having a higher osmotic potential than the first solution, such that solvent from the first solution passes across the membrane into the second solution to provide a diluted second solution, and

b) passing the diluted second solution through a nanofiltration membrane to extract solvent from the second solution, the nanofiltration membrane being cast as a skin layer on a support and wherein the separation properties of the nanofiltration membrane are controlled by the pore size and electrostatic properties of the skin layer, and wherein the second solution contains solute species that are sufficiently large to be separated using said nanofiltration membrane.

21. (New) A process as claimed in claim 20, wherein the nanofiltration membrane is suitable for the separation of components that are 0.001 to 0.01 microns in size.

22. (New) A process as claimed in claim 20, wherein the second solution is prepared by introducing a known quantity of solute into a known quantity of solvent.

23. (New) A process as claimed in claim 20, which comprises dividing the diluted second solution from step a) into a first portion and a second portion, extracting solvent from the first portion by passing the first portion through the nanofiltration membrane of step b), and extracting solvent from the second portion by crystallization and/or distillation.

24. (New) A process as claimed in claim 23, wherein the residue from the nanofiltration step b) is treated by a crystallization and/or distillation technique.

25. (New) A process as claimed in claim 24, wherein the crystallization and/or distillation technique is selected from multi-flash distillation, multi-effect distillation, mechanical vapour compression, MED-thermo compression and rapid spray distillation.

26. (New) A process as claimed in claim 20, wherein the second solution is an aqueous solution and said solute species is selected from one or more of the group consisting of $\text{MgSO}_4 \cdot 6\text{H}_2\text{O}$, $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$, $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$, $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$, $\text{CaCl}_2 \cdot 6\text{H}_2\text{O}$, potassium alum. $24\text{H}_2\text{O}$, potassium chloride, $\text{Na}_2\text{HPO}_4 \cdot 12\text{H}_2\text{O}$, glucose, fructose and sucrose.

27. (New) A process as claimed in claim 20, wherein the solvent of the second solution is the same as the solvent of the first solution.

28. (New) A process as claimed in claim 20, wherein the solvent of the second solution is water.

29. (New) A process as claimed in claim 20, wherein the first solution is waste stream from an industrial or agricultural process or a domestic water stream.

30. (New) A process as claimed in claim 20, wherein the first solution is a saline solution.

31. (New) A process as claimed in claim 30, wherein the saline solution is seawater or brackish water.

32. (New) A process as claimed in claim 20, wherein an elevated pressure induced in the second solution by influx of solvent from the first solution is used to assist in the extraction of solvent from the second solution.

33. (New) A process as claimed in claim 20, wherein after solvent from the first solution passes across the membrane to dilute the second solution, the diluted second solution is contacted with one side of a further selective membrane and a further solution having a higher osmotic potential than the diluted second solution is contacted with the other side of the membrane, such that solvent from the diluted second solution passes across the membrane to dilute the further solution.

34. (New) A process as claimed in claim 20, wherein the second solution contains an additive selected from anti-scaling agents, corrosion inhibitors, anti-fouling agents and disinfectants.

35. (New) A process as claimed in claim 34, wherein said second solution is circulated in a closed loop, such that said additives are reused.

36. (New) A process as claimed in claim 20, wherein the selective membrane of step a) has an average pore size of 5 to 50 Angstroms.

37. (New) A process as claimed in claim 20, wherein the selective membrane has an average pore size of at least 10 Angstroms and the second solution contains solute species that are too large to pass through pores of the membrane.

38. (New) A process as claimed in claim 37, wherein the solute species in the second solution comprises at least one cationic species and/or at least one anionic species that is larger than an average pore size of the nanofiltration membrane.

39. (New) A process as claimed in claim 20, wherein the solvent extracted from the second solution comprises water, and said water is used to pump oil from oil wells.